AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An optical recording system including a recording / reproducing optical head having an objective lens and an optical radiation source for emitting light having a wavelength of between 300 nm and 500 nm, and an optical recording medium recorded and reproduced with irradiation of light thereon from said optical head, said irradiation of light being made by the objective lens of which numerical aperture is larger than 1 when irradiated with a light wavelength of substantially 400 nm, said optical recording medium comprising at least a silicon oxide layer and a silicon layer being formed over a substrate in that order,

wherein said silicon layer has formed thereon a protective layer of which refractive index is larger than a numerical aperture of said objective lens, and

wherein said objective lens is comprised of a system of two lenses, at least one of which is a solid immersion lens (SIL) and said solid immersion lens is shaped like a conical surface;

wherein said silicon oxide layer is formed directly on said substrate, said silicon layer is formed directly on said silicon oxide layer, and said protective layer is formed directly on said silicon layer, and

wherein both said silicon layer and said protective layer have a refractive index larger than a numerical aperture of said objective lens when irradiated with a light wavelength of substantially 400 nm.

2. (Previously Presented) The optical recording system according to claim 1, wherein said recorded pits are recorded by changing said silicon layer into silicon oxide.

3. - 4. (Canceled)

5. (Currently Amended) An optical recording and reproducing method for recording and reproducing data from an optical recording medium with irradiation of light having a wavelength of between 300 nm and 500 nm from an objective lens contained in an optical recording / reproducing head, said light being irradiated through the objective lens having a numerical aperture larger than 1 when irradiated with a light wavelength of substantially 400 nm, wherein said optical recording medium has at least a silicon oxide layer, a silicon layer, and a protective layer formed over a substrate, in that order, recorded pits being formed by changing said silicon layer into silicon oxide, and

a refractive index of the protective layer is larger than a numerical aperture of said objective lens, and

wherein said objective lens is comprised of a system of two lenses, at least one of which is a solid immersion lens (SIL) and said solid immersion lens is shaped like a conical surface;

wherein said silicon oxide layer is formed directly on said substrate, said silicon layer is formed directly on said silicon oxide layer, and said protective layer is formed directly on said silicon layer, and

wherein both said silicon layer and said protective layer have a refractive index larger than a numerical aperture of said objective lens when irradiated with a light wavelength of substantially 400 nm.

Claims 6. – 7. (Canceled)

8. (Previously Presented) The optical recording system according to claim 1, wherein both said silicon layer and said protective layer have a refractive index larger than a numerical aperture of said objective lens when irradiated with a light wavelength of substantially 400 nm.

9. (Previously Presented) The optical recording and reproducing method according to claim 5, wherein both said silicon layer and said protective layer have a refractive index larger than a numerical aperture of said objective lens when irradiated with a light wavelength of substantially 400 nm.

10. – 11. (Canceled)

12. (Previously Presented) The optical recording system according to claim 1, wherein the refractive index of the silicon recording layer is greater than 4 when irradiated by said light.

13. (Previously Presented) The optical recording and reproducing method according to claim 5, wherein the refractive index of the silicon recording layer is greater than 4 when irradiated by said light.

14. – 17. (Canceled)

18. (Previously Presented) The optical recording system according to claim 1, wherein said solid immersion lens (SIL) has a main component material selected from the group consisting of $SrTiO_3$, $Bi_4Ge_2O_{12}$, and $Bi_4Ge_3O_{12}$.

19. (Previously Presented) The optical recording and reproducing method according to claim 5, wherein said solid immersion lens (SIL) has a main component material selected from the group consisting of $SrTiO_3$, $Bi_4Ge_2O_{12}$, and $Bi_4Ge_3O_{12}$.

20. – 23. (Canceled)

24. (Previously Presented) The optical recording system according to claim 1, wherein the composition of the SIL lens is selected so as to cause the objective lens to have an overall numerical aperture larger than 1 when irradiated with a light wavelength of substantially 400 nm.

Claims 25-26 (Cancelled).

27. (Previously Presented) The optical recording system according to claim 1, wherein the silicon oxide layer has a refractive index less than 1.5 when irradiated with a light wavelength of substantially 400 nm.

28. (Previously Presented) The optical recording system according to claim 1, wherein every layer of the optical recording medium is comprised of a silicon compound.

29. (Previously Presented) The optical recording system according to claim 1, wherein the optical recording medium contains only layer compositions that are not harmful for the natural environment and have small load to the natural environment.